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MEMORANDUM

TO: Heads of Fire Departments

FROM: Stephen D. Coan
State Fire Marshal

DATE: May 1, 2010

SUBJECT: **527 CMR 4 and Implementation of: Chapter 453 of the Acts of 2008 "An Act Relative to Homeowner Heating Safety"**

The Board of Fire Prevention Regulations (BFPR) has amended 527 CMR 4.00 to reflect Chapter 453 of the Acts of 2008 and the required upgrades to existing systems that must be completed by July 1, 2010. The amended pages of 527 CMR 4 are included for insertion into your copy of the State Fire Code and will also be posted on our website for your convenience.

Regulatory changes made to 527 CMR 4.00 are to conform to chapter 453 of the Acts of 2008 and include:

- A permit is required for the upgrades required by 527 CMR 4.00 made to existing installations.
- Inspection of upgrade requirements are optional and up to the local fire department.
- New burner installations remain unchanged and still require both a permit and inspection.
- Supply and return lines in contact with concrete or the earth are subject to sleeving requirements or OSV, as applicable.

Additional information regarding this new law can be found on our web site, which includes a link to the DEP web site and our past correspondence on this law.

If you need further information, please contact the Department of Fire Services, Division of Fire Safety, at (978) 567-3375 or in Western Massachusetts at (413) 587-3181.

4.02: continued

Centralized Oil Distribution System. A system of piping through which oil is supplied from a separate central supply tank or tanks to more than one building, mobile home, recreational vehicle, or other structure.

Certificate of Completion. A standard form issued for use in all jurisdictions throughout the Commonwealth.

Chimney. *See* 780 CMR: *Massachusetts State Building Code.*

Chimney Connector. The pipe that connects a fuel-burning appliance to a chimney.

Clearance. The distance between a heat-producing appliance, chimney, chimney connector, vent, vent connector, or plenum, and other surfaces.

Combustible Material. Material made of or surfaced with wood, compressed paper, plant fibers, plastics, or other material that will ignite and burn, whether flame-proofed or not, or whether plastered or unplastered.

Confined Space. Any space whose volume is less than 50 cubic feet per 1,000 Btu/hr ($4.8m^3$ per kw) of the aggregate input rating of all fuel-burning appliances installed therein.

Constant-Level Valve. A device for maintaining within a reservoir a constant level of oil fuel for delivery to an oil burner.

Control, Limit. An automatic safety control responsive to changes in fluid flow or level, pressure, or temperature, and which is normally set beyond the operating range for limiting the operation of the controlled equipment by shutting off the energy supply.

Control, Primary Safety (Combustion Safeguard). A safety control responsive directly to flame properties, sensing the presence or absence of flame and, in the event of ignition failure or unintentional flame extinguishment, causing safety shutdown.

Control, Safety. Automatic controls (including relays, switches, and other auxiliary equipment used in conjunction therewith to form a safety-control system) that are intended to prevent unsafe operation of the controlled equipment.

Cooking Appliance, Floor-Mounted Restaurant-type. A range, oven, broiler, or other miscellaneous cooking appliance of a type designated for use in hotel and restaurant kitchens and for mounting on the floor.

Damper. A valve or plate for controlling draft or the flow of gases including air.

Direct-Fired Appliance. A fuel-burning appliance in which the products of combustion (flue gases) are mixed with the medium (*e.g.*, air) being heated.

Direct Vent Appliance. A system consisting of an appliance, combustion air and flue gas connections between the appliance and the outside atmosphere, and a vent cap supplied by the manufacturer, and constructed so that all air for combustion is obtained from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

Draft Booster. A power operated fan, blower, or other device installed in the chimney connector to increase the natural draft developed in the connected chimney.

Draft Regulator, Barometric. A device built into a fuel-burning appliance or made a part of a chimney connector or vent connector, which functions to reduce excessive draft through an appliance to a desired value by admitting ambient air into the appliance chimney, chimney connector, vent or vent connector.

4.02: continued

Fire Wall. *See* 780 CMR: *Massachusetts State Building Code*.

Flue Collar. That portion of an appliance designed for attachment of a chimney or vent connector or a draft hood.

Fuel Oil. Any oil as specified by the American Society for Testing and Materials (ASTM) standard D396-90, Standard Specification for Fuel Oils; or ASTM D6751-02, Standard Specification of Biodiesel Fuel (B100) Blend Stock for Distillate Fuels.

Furnace, Central Warm-Air. A self-contained indirect-fired or electrically heated appliance designed to supply heated air through ducts to spaces remote from or adjacent to the appliance location.

(a) Gravity-type Central Furnace. A central furnace depending primarily on circulation of air by gravity.

(b) Gravity-type Central Furnace with Integral Fan. A central furnace equipped with a fan as an integral part of its construction and operable on gravity systems only. The fan is used only to overcome the internal resistance to air flow.

(c) Gravity-type Central Furnace with Booster Fan. A central furnace equipped with a booster fan that does not materially restrict free circulation of air by gravity flow when such a fan is not in operation.

(d) Forced-Air-type Central Furnace. A central furnace equipped with a fan that provides the primary means for circulation of air.

1. Horizontal-type Central Furnace. A furnace designed with air flow through the furnace essentially in a horizontal path.
2. Upflow-type Central Furnace. A furnace designed with air flow essentially in a vertical path, discharging air at or near the top of the furnace.
3. Downflow-type Central Furnace. A furnace designed with air flow essentially in a vertical path, discharging air at or near the bottom of the furnace.

Furnace, Duct. A central furnace designed for installation in a duct of an air distribution system to supply warm air for heating and that depends for air circulation on a blower not furnished as part of the furnace.

Furnace, Floor. A self-contained indirect-fired or electrically heated furnace designed to be suspended from the floor of the space to be heated. A fuel-burning floor furnace is designed to take air for combustion from outside the space being heated and is provided with means for observing flame and lighting the appliance from such space.

Furnace, Stationary-type Industrial. A low-, medium- or high-heat appliance classified in accordance with its character and size and the temperatures developed in the portions thereof where substances or materials are heated for baking, drying, roasting, melting, vaporizing, or other purposes.

Gallon of Oil. The amount of oil that will occupy one standard U.S. Gallon (231 cubic inch) at a temperature of 60°F (16°C).

Gravity Feed Burner. A burner which receives its oil supply by static head due to elevation of the supply source.

Heat Reclaimer (Chimney Connector Type). A heat exchanger intended to be installed in a chimney connector, between a heating appliance and the chimney, to transfer heat from the flue gases through metal to air or water.

Heating and Cooking Appliance. An oil-fired appliance not intended for central heating. These appliances include kerosene stoves, oil stoves, and conversion range oil burners.

Indirect-fired Appliance. A fuel-burning appliance in which products of combustion (flue gases) are not mixed in the appliance with the medium (*e.g.*, air) being heated.

4.02: continued

Installation. The complete setting-in-place, ready for operation of an oil burning appliance together with its accessories and equipment, or any change in an existing oil burner installation. (Note: Cleanings and nozzle, filter, pump, transformer or motor replacement are not considered installations.

International System of Units (SI Units). A universal, unified, self-consistent system of measurement units based on the MKS (meter, kilogram, second) system.

Kerosene Stove. A vented, self-contained, self-supporting kerosene burning range or room heater.

Labeled. Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization acceptable to the state fire marshal and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

Listed. Equipment or materials included in a list published by an organization acceptable to the marshal and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

Marshal. The State Fire Marshal

Nationally Recognized Testing Laboratory. An organization which tests for safety and lists, labels or accepts equipment or materials and which meets the criteria in 527 CMR 49.00: *Appendix C*.

Oil Burner. A device for burning oil in heating appliances such as boilers, furnaces, water heaters, ranges, and the like. A burner of this type may be furnished with or without a primary safety control; and it may be a pressure atomizing gun type, a horizontal or vertical rotary type, or a mechanical or natural draft vaporizing type.

Oil Burner Installation. A listed oil burner of any type with listed electrical or mechanical operating and safety controls including its own tank, piping, wiring, controls and related devices and including all oil burners, oil-fired units, and heating and cooking appliances.

Oil Burning Stove. A self-contained, free standing, above-the-floor indirect-fired appliance equipped with one or more oil burners. It may be equipped with an integral oil tank or may be designed for connection to a separate oil supply tank.

Oil-fired Unit. An appliance equipped with one or more oil burners and all the necessary safety controls, electrical equipment and related equipment manufactured for assembly as a complete unit. This definition does not include kerosene stoves or oil stoves.

Oil Safety Valve. A listed device that:

(a) when installed at the supply tank in gravity feed oil systems, prevents the flow of oil should the supply line to the burner rupture or break;

(b) and protects the oil burner pump from input pressure exceeding three psi.

Permit. Any permit required by 527 CMR 4.00 and issued by the head of the fire department under the authority of M.G.L. c. 148, §§ 10A, 23 and 24.

4.02: continued

Post Purge Control. An electrical control that is designed to allow the power venter or burner to operate after the burner flame has shut off, thus purging the vent system and heating appliance of combustion gases.

Power Venter. An electrically operated mechanical fan that is designed and listed to produce a negative draft at the heating appliance to exhaust combustion gases.

Pump, Automatic Oil. A pump, not an integral part of an oil burner, that automatically pumps oil from the supply tank and delivers the oil by gravity under a constant head to an oil-burning appliance. The pump is designed to stop pumping automatically in case of total breakage of the oil supply line between the pump and the appliance.

Pump, Oil Transfer. An oil pump, automatically or manually operated, that transfers oil through continuous piping from a supply tank to an oil-burning appliance or to an auxiliary tank, and that is not designed to stop pumping automatically in case of total breakage of the oil supply line between the pump and the appliance.

Range. An appliance intended primarily for cooking, including roasting, baking, or broiling or any combination of these functions.

Range Oil Burner. A gravity-feed sleeve-type oil burner having non-adjustable wicks designed for installation in a stove used primarily for cooking.

Readily Accessible. Capable of being reached easily and quickly for operation, maintenance, and inspection.

Room Heater. A self-contained, vented, free-standing air-heating appliance intended for installation in the space being heated and not intended for duct connection.

Room Heater, Circulating. A vented room heater with an outer jacket surrounding the heat exchanger arranged with openings at top and bottom so that air circulates between the heat exchanger and the outer jacket. Room heaters that have openings in an outer jacket to permit some direct radiation from the heat exchanger are classified as radiant type.

Room Heater, Radiant. A room heater designed to transfer heat primarily by direct radiation.

Secondary Safety Control. A normally closed thermally activated electrical control, designed to de-energize the burner control circuit and shut down the burner when a positive pressure occurs in the power vent system. This control shall be equipped with a manual reset device.

Shall. Indicates a mandatory requirement.

Sump. The receptacle employed with a vacuum tank.

Tank, Auxiliary. A tank having a capacity of not over 60 gallons (227 L) listed for installation in the supply piping between a burner and its main fuel supply tank. It may be included as an integral part of an automatic pump, or a transfer pump, or may be a separate tank.

Tank, Gravity. A supply tank from which the oil is delivered directly to the burner by gravity.

Tank, Integral. A tank that is furnished by the manufacturer as an integral part of an oil-burning appliance.

4.02: continued

Tank, Supply. A separate tank connected directly or by a pump to the oil-burning appliance.

Tank, Vacuum or Barometric. A tank not exceeding five-gallons (11-L) capacity, which maintains a definite level of oil in a sump or similar receptacle by barometric feed. Fuel is delivered from the sump to the burner by gravity.

Unconfined Space. Any space whose volume is equal to or greater than 50 cubic feet per 1,000 Btu/hr (4.8m^3 per kw) of the aggregate input rating of all fuel-burning appliances installed therein. Rooms connecting directly with the space in which the appliances are located by means of openings that have no doors or closures, unless fully louvered, shall be considered part of the unconfined space.

Unit Heater. A self-contained heating appliance, which may or may not include an integral fan for circulating air, which may be of the floor-mounted or suspended type, intended for the heating of the space in which it is installed. A unit heater may be an indirect-fired fuel-burning appliance, or may utilize steam, hot water, or electricity.

Valve, Manual Oil Shutoff. A manually operated valve in an oil line for the purpose of turning on or completely shutting off the oil supply to the burner.

Valve, Oil Control. An automatically or manually operated device consisting essentially of an oil valve for controlling the fuel supply to a burner.

(a) Metering (Regulating) Valve. An oil control valve for regulating burner input.

(b) Safety Valve. An automatic oil control valve of the "on" and "off" type (without any by-pass to the burner) that is actuated by a safety control or by an emergency device.

Vent Hood. A device which is part of the vent system that is designed to terminate combustion gases to the outside atmosphere.

Vent, Type L. A passageway, vertical or nearly so, composed of listed factory-built components assembled in accordance with the terms of listing for conveying flue gases from oil and gas appliances or their vent connectors to the outside atmosphere.

Wall Furnace. A self-contained, vented appliance complete with grills or equivalent, designed for incorporation in or permanent attachment to the structure of a building, mobile home, or recreational vehicle, and furnishing heated air directly into the space to be heated through openings in the casing.

Such appliances shall not be provided with duct extensions beyond the vertical and horizontal limits of the casing proper, except that boots, not to exceed ten inches (254 mm) beyond the horizontal of the casing, for extension through walls of nominal thickness, may be permitted.

When provided, such boots shall be supplied by the manufacturer as an integral part of the appliance. This definition excludes floor furnaces, unit heaters, and central furnaces.

Water Heater. An indirect-fired fuel burning or electrically heated appliance for heating water to a temperature not more than 200°F (93°C) having an input not greater than 200,000 Btu or 58.6 kw per hr and a water containing capacity not exceeding 120 U.S. gallons (454 L).

For additional definitions of terms relating to chimneys and heat-producing appliances, refer to 780 CMR: *Massachusetts State Building Code*.

4.03: General Requirements

(1) Approval of Oil Burner: Equipment, Permits and Certificates.

(a) Installation. All fuel oil burners and all equipment in connection therewith shall be installed and maintained in accordance with 527 CMR 4.00. Chimneys, connectors and power venters shall also be installed in accordance with 780 CMR: *Massachusetts State Building Code*.

4.03: continued

(b) Permits. Fuel oil in excess of ten gallons used in connection with an oil burner shall not be stored in or adjacent to any building or other structure without a permit. The head of the fire department may grant a temporary permit for the keeping and use of fuel oil under such terms as he or she may prescribe. A permit shall not be required for routine maintenance, such as the replacement of nozzles, ignition electrodes, or filters; however, a combustion performance test shall be conducted. [*See* Form 1]

No fuel oil burner shall be installed in any building or other structure without a permit first having been obtained from the head of the fire department. A combustion performance test is not required when tank replacement is the only work being conducted under a permit.

(c) Automatic Shut Off. Any fuel oil burner for which a competent attendant will not be CONSTANTLY on duty in the room where the burner is located, while the burner is in operation, shall be provided with an approved automatic means to prevent abnormal discharge of oil.

(d) Application to Install. No persons shall make an installation or alteration of any fuel oil burning equipment unless an application for a permit from the head of the fire department has been submitted. This form [*See* Form 1] shall be used by all fire departments throughout the Commonwealth. Electronic media storage is permissible.

The application form for such permit shall set forth the name of the owner or occupant of the building or other structure, the person or company who proposes to make the installation of such equipment and the address where such installation is to be made.

If an oil burner installation is made under emergency conditions, said application shall be made within 24 hours thereafter, excluding Saturdays, Sundays and holidays.

(e) Maximum Fuel Allowed Without a License. In accordance with the provisions of M.G.L. c. 148, § 13, as amended, the Board of Fire Prevention Regulations hereby prescribes 10,000 gallons of light fuel oil or 10,000 gallons of heavy fuel oil as the maximum amount of fuel oil that may be kept for use in a building or other structure without a license and registration or either of them, provided that a permit has been obtained and provided that the tank installation is in accordance with 527 CMR 4.00 and applicable rules of 527 CMR 9.00: *Tanks and Containers*.

(f) Certificate of Completion. The person or persons making the installation shall within 72 hours (excluding Saturday, Sunday and holidays) after test-firing the burner, file with the head of the fire department a certificate of completion on a form provided herein.

Upon receipt of such certification of completion, the head of the fire department shall make an inspection; if same is found to be in accordance with 527 CMR 4.00, the head of the fire department shall issue to the owner or occupant a permit for the keeping, storage and use of fuel oil in connection therewith, except where such storage is otherwise authorized by license; provided, however, that if such installation is found not be in accordance with 527 CMR 4.00, the permit shall be withheld and shall not be issued until the proper corrections have been made as directed. If after 30 days, an inspection is not conducted, the delivery of fuel oil shall not be prohibited for lack of a permit to store. [*See* Form 1]

The head of the fire department may waive the inspection for installations required by 527 CMR 4.04(1)(f).

(g) Certificate of Competency. (*See* M.G.L. c. 148, § 10D, and the applicable provisions of St. 1964, c. 680.) A person holding a certificate of competency as an oil burner technician may connect or disconnect for the purpose of repair or replacement, any device or control required by 527 CMR 4.00 to be part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, control or part to be repaired or replaced, notwithstanding any contrary provision of M.G.L. c. 141.

Any person licensed as an electrician under M.G.L. c. 141 may do any electrical work in connection with the alteration, repair or installation of oil burning equipment without being certified as an oil burner technician.

(h) Exposure to Fire. If any oil tank, oil burner, oil burner control or wiring related to an oil burner has been exposed to fire and is suspected of being damaged, the entire installation shall be made inoperative by the head of the fire department who shall so notify the owner or occupant of the building or structure. Said installation shall not be operated until approved by the head of the fire department.

(i) Tank Removal. Unless otherwise provided for in 527 CMR 9.00, a permit shall be obtained from the head of the fire department for the removal of a fuel oil storage tank.

4.03: continued

The Commonwealth of Massachusetts
Department of Fire Services

527 CMR 4.00 - Form 1

Application for Permit, Permit, and Certificate of completion for the Installation or Alteration of Fuel Oil Burning Equipment and the Storage of Fuel Oil

_____
(City or Town) (Date)

Permit #'s: FD _____ Elec. _____ FDID#: _____ Fee Paid: _____

Owner/Occupant Name: _____ Tel #: _____

Installation Address: _____ Serviced Floor or Unit #: _____

☐ Heating Unit ☐ Domestic Water Heater ☐ Power Vent ☐ Other _____
Burner: ☐ New ☐ Existing Location: _____

Mfg: _____

Type: _____ Model # or Size: _____ Nozzle Size: _____
☐ Fuel Oil ☐ Kerosene ☐ Waste oil
Storage Tank: ☐ New ☐ Existing Location: _____

Type: _____ Capacity: _____ gals. No. of Tanks: _____

Special requirements (or additional safety devices) _____

_____

☐OSV Valve ☐Oil line protected ☐Sheet Rock ☐Sprinkler AFUE: ☐yes ☐no EF: ☐yes ☐no
(Furnace and boilers) (Water heater)

Co. Name: _____ Tel # _____

Address: _____ City: _____ Zip: _____

Completion Date: _____

Combustion Test: Gross Stack Temp.: _____ Net Stack Temp.: _____

CO^2 Test: _____ Breech Draft: _____

Smoke: _____ Overfire Draft: _____ Efficiency rating %: _____

I, the undersigned certify that the installation of fuel burning equipment has been made in accordance with M.G.L. c. 148 and 527 CMR 4.00 currently in effect. Furthermore, this installation has been tested in accordance with such requirements, is now in proper operating condition and complete instructions as to its use and maintenance have been furnished to the person for whom the installation (or alteration) was made.

Installer: _____
Print Name *Cert of C#* *Signature (no Stamp)*

Address: _____ City: _____

Once signed by the fire department, this is a PERMIT for the storage and use of oil burning equipment.

Approved by: _____ Date: _____

Keep Original as application. Issue duplicate as permit. This form may be photocopied. .

4.03: continued

The Commonwealth of Massachusetts
Department of Fire Services

527 CMR 4.00 - Form 1A

Certificate of Compliance
M.G.L. c. 148, § 38J

City or Town: _____

Street Name & Number: _____

Name of Property Owner: _____

This certifies that a visual inspection of the fuel supply line(s) for the aboveground heating oil storage tank was completed in accordance with M.G.L. c. 148, § 38J(d) for the residential property identified above, and the following equipment was observed:

☐ Each fuel supply line is enclosed with a continuous non-metallic sleeve

☐ Each fuel supply line is equipped with an oil safety valve

This visual inspection and certification was completed on:

Date: _____

By: (Signature of Oil Burner Technician) _____

(Print Name of Oil Burner Technician) _____

Certificate of Competency #: _____

Upon completion of Form 1A, the property owner shall receive a copy of the form and a copy shall also be submitted to the head of the local fire department or a designee.

This form can be photocopied or reproduced in triplicate.

4.03: continued

(2) Fuel Oil. The grade of fuel oil used for any fuel oil burner shall be one which tests and experience have been shown to be suitable for use with that burner, but in no case shall the grade of fuel oil be heavier than that for which the burner has been designed or adjusted.

(3) Gravity Feed to Burners. Gravity feed shall be used only with a burner arranged to prevent abnormal discharge of oil at the burner by automatic means specifically approved for the burner in which it is used.

(4) Fuel Oil Delivery.

(a) Fuel oil shall not be delivered to any storage tank unless the deliverer has knowledge that a permit has been obtained in accordance with 527 CMR 4.03(1)(b) and that such a permit is in effect at the time of delivery. Such knowledge may be considered to consist of any of the following:

1. Verification by the head of the fire department that such a permit is in effect.
2. Written verification from the owner or customer that the permit is either in his possession or is posted on the premises.
3. Observation that such a permit is in the possession of the owner or customer, or is posted on the premises.

(b) Fuel oil shall not be delivered to a storage tank by means of a pump or under pressure in any case where a tight connection is made between the discharge line and the tank inlet, unless such storage tank is designed to withstand the additional stress to which it may be subjected or unless the vent pipe for such tank is of sufficient size to relieve the tank of any undo pressure in excess of five psi. The delivery truck operator shall remain at the fill point during the entire operation.

(c) Fuel oil equal to the maximum capacity of the storage tank may be delivered without such a permit being in effect whenever an oil burner installation is first made provided that an application has been made in accordance with 527 CMR 4.03(1)(d).

(5) Tanks - General

(a) A tank for the keeping of fuel oil shall not be buried nor otherwise concealed inside or outside of any building or other structure until it has been inspected and approved by the head of the fire department.

(b) A supply tank larger than ten gallons (38 L) but not larger than 660 gallons (2500 L) shall meet the construction provisions of Standard UL 80, UL 2258 or be a secondary containment type tank meeting the following standards:

1. The primary tank shall meet the German Institute for Construction Technology (DIBt) Standard PA-VI-321, Requirements and Test Methods for Thermoplastic Tanks Made From Blow Molded Polyethylene, Rotationally Molded Polyethylene and Anionic Polymerization of Polyamide-6, or an equivalent standard.
2. The secondary containment shall be provided by a liquid tight outer jacket of galvanized steel or stainless steel with a minimum 18 gauge nominal thickness.
3. A means of detecting a leak from the primary tank into the secondary tank shall be provided.

(c) Supply tanks larger than 660 gallon capacity shall meet the provisions of Standard UL 142.

(d) A supply tank shall be of such size and shape that it can be installed in and removed from the building as a unit. Any person removing a fuel oil tank from inside a building for a purpose other than replacement or repair, shall remove all fill and vent pipes previously connected to said tank.

(e) A shutoff valve as described in 527 CMR 4.04(2)(i) shall be provided immediately adjacent to the burner supply connection at the bottom of a supply tank.

(f) A supply tank larger than ten-gallon capacity shall be provided with an open-vent pipe having a minimum 1¼ inches diameter and a fill pipe not larger than the diameter of the vent, both terminating outside the building. (*See* Table 4.03 1.)

4.03: continued

Table 4.03 1.

Aggregate Capacity of Tanks: U.S. Gallons	Diameter of Vent Iron Pipe Size
500 or less	1¼ in.
501 to 660	1½ in.
660 to 1320	1½ in.

For SI Units: 1 gal. = 3.785 L; 1 in. = 25.40mm

NOTE: Where tanks are filled by the use of a pump through tight connections, a vent pipe not smaller in size than the discharge of the pump should be used.

4.03: continued

(g) A supply tank provided with fill and vent pipes shall be equipped with a gaging device.
(h) Any unused opening in a tank equipped with fill and vent pipes shall be closed vapor-tight by a pipe plug or cap screwed up tightly.
(i) All fill and vent piping shall be standard cast iron, steel or brass pipe, with standard steel, malleable iron, cast iron or brass fittings. Plastic pipe and soldered copper tubing and fittings shall not be used for fill and vent piping.
(j) Cross connection of oil supply and return lines to two or more supply tanks to the same burner shall be acceptable and shall be made by a pipe no smaller than ½ inch iron pipe or ½ inch O.D. tubing.
(k) Two supply tanks may be provided with a single fill and a single vent provided:
1. The fill and vent pipes are not connected to the same tank,
2. The crossover pipe is a minimum two inch diameter with swing joints and a ground joint union,
3. The vent to the outside is a minimum two inch diameter.
(l) All new or replacement tanks shall be securely supported by rigid noncombustible supports to prevent settling, sliding or lifting. Tanks shall be mounted on a continuous concrete slab extending eight inches beyond the perimeter of the tank or tanks.

(6) Unenclosed Tanks: Installation Inside Buildings.
(a) A supply or storage tank located above the lowest story, cellar, or basement shall not exceed 60-gallon (227 L) capacity and the total capacity of tanks so located shall not exceed 60 gallons (227 L). Exception: Tanks located in attached grade level space with no usable space beneath it.
(b) A supply tank shall not be larger than 660 gallons. The aggregate capacity of any unenclosed tanks installed inside a building, or any portion of a building separated from another portion of a building by a fire separation, shall be 1320 gallons. The fire separation wall shall consist of two-hour rated fire resistive assemblies with opening protection and continuity in conformance with 780 CMR: *The Massachusetts Building Code*.
(c) An unenclosed supply tank not larger than ten gallons (38 L) shall be placed not less than two feet (0.6 m) horizontally from any source of heat either in or external to the appliance being served but in any case shall be located so that the temperature of the oil in the tank will not exceed 100°F (38°C).
(d) An unenclosed supply tank larger than ten gallons (38 L) shall be placed not less than five feet (1.5 m) from any fire or flame either in or external to any fuel-burning appliance, nor shall such a tank obstruct quick and safe access to any utility service meters, switch panels and shutoff valves.
(e) When a supply tank larger than ten-gallon (38 L) capacity is provided with an opening in the bottom for use as a burner supply connection or as a drain, the tank shall be pitched toward the opening.
(f) When tanks are installed inside garages or other areas subject to vehicular impact, physical barriers shall be provided. The physical barrier shall consist of lally columns, substantial pipes, bollards or similar barriers.

(7) Enclosed Tanks: Installation Inside Buildings.
(a) Individual supply tanks larger than 660 gallon capacity shall be enclosed. The enclosure shall consist of two-hour rated fire resistive assemblies with opening protection and continuity in conformance with 780 CMR: *The Massachusetts Building Code*.
(b) Each tank enclosure shall be provided with a noncombustible liquid tight sill or ramp at least six inches high. If the sill or ramp is more than six inches high, the walls to a height corresponding to the level of the oil that will be retained shall be built to withstand the lateral pressure due to the liquid head.
(c) Regardless of enclosure, a supply or storage tank located above the lowest story, cellar, or basement shall not exceed 60 gallon capacity, and the total capacity of tanks so located shall not exceed 60 gallons.
(d) Enclosed tanks shall be supported at least four inches above the floor by masonry saddles at least 12 inches thick, spaced not more than eight feet on centers and extending the full width of the tank. At least 15 inches clearance shall be provided between the tank and the top and walls of the tank enclosure for the purpose of inspection and repair.

4.03: continued

(e) All connections to an enclosed supply tank of more than 660 gallon capacity shall be made through the top of the tank, and the transfer of oil shall be by pump only and through continuous piping to and from the consuming appliance.

(8) Tanks: Installations Outside Buildings.

(a) Underground tanks and piping, individual aboveground tanks larger than 660 gallons capacity, more than two tanks at one location, or multiple tanks with an aggregate capacity over 660 gallons, shall meet the provisions of 527 CMR 9.00: *Tanks and Containers*.

(b) A supply tank larger than ten gallon capacity but not larger than 660 gallon capacity shall meet the construction provisions of Standard UL 80. Supply tanks of more than 660 gallon capacity shall meet the construction provision of Standard UL 142.

(c) For each oil burner installed in a building or other structure, a fuel oil tank of not more than 660 gallon capacity or two tanks of aggregate 660 gallon capacity may be located outside and adjacent to such building or structure provided the tank is suitably protected from physical damage incident to outside use and protected from atmospheric corrosion. Protection from atmospheric corrosion shall consist of at least one coat of organic alkyd resin type or asphalt base type paint on the exterior tank surface. If during transportation or installation the original protective coating has been damaged, these areas shall be recovered. The tank shall not block normal means of egress.

(d) Tanks installed outside of buildings shall be mounted on a continuous concrete slab at least four inches in depth and extending eight inches beyond the perimeter of the tank or tanks.

Tanks installed outside of buildings shall be securely supported by rigid non-combustible supports to prevent settling, sliding or lifting.

(9) Vent Piping.

(a) A supply tank shall be equipped with an open vent or an automatic operated vent, terminating outside the building. Vent openings and vent pipes shall be of ample size to prevent abnormal pressure in the tank during filling but not smaller than the pipe size specified in Table 4.03 1.

(b) Vent pipes shall be installed as to drain toward one tank without sags or traps in which liquid can collect. They shall be located so that they will not be subjected to physical damage. Vent pipes from tanks may be connected into one outlet pipe, The outlet pipe shall be at least as large as the largest individual vent pipe connected thereto. In no case shall the point of connection between two or more vent pipes be lower than the top of any fill pipe opening. The lower end of a vent pipe shall enter the tank through the top and shall extend into the tank not more than one inch (25 mm).

(c) Vent pipes shall terminate outside of buildings at a point not less than two feet (0.6m) measured vertically or horizontally from any building opening.

Outer ends of vent pipes shall terminate in a weatherproof vent cap or fitting or be provided with a weatherproof hood. All vent caps shall have a minimum free open area equal to the cross-sectional area of the vent pipe and shall not employ screens finer than four mesh. Vent pipes shall terminate at least three feet from grade to avoid being obstructed with snow and ice. Vent pipes from tanks containing heaters shall be extended to a location where oil vapors discharging from the vent will be readily diffused. If the static head with a vent pipe filled with oil exceeds ten psi (70 kPa), the tank shall be designed to withstand the maximum static head which will be imposed.

A fixed sash window shall not be considered an opening for the purpose of 527 CMR 4.03(9)(c).

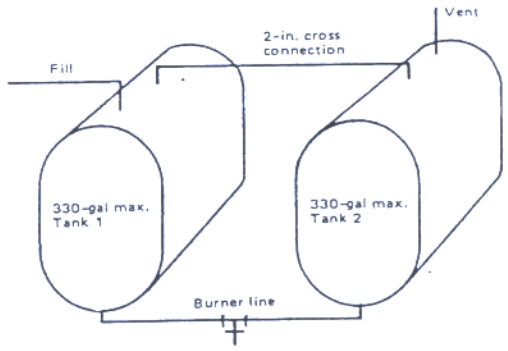
(d) Vent pipes shall not be cross-connected with pipes other than vent pipes.

1. Two supply tanks connected to the same burner shall be permitted to be cross-connected and provided with a single fill and a single vent, but when so connected they shall be on a common slab, at the same height, and rigidly secured, one to the other. (*See* Figures 4.03 1. and 2.)

4.03: continued

a. Recommended arrangement of two fuel tanks of not more than 660 gallons (2500 L) aggregate capacity.

Figure 4.03 1.



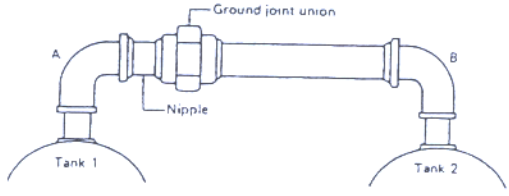
Recommended arrangement of two fuel oil tanks of not more than 660 gal (2500 L) aggregate capacity.

For SI Units: 1 gal. = 3.785 L; I in. = 25.4 mm.

In this arrangement of two tanks only one fill pipe and one vent pipe are used. During filling, oil enters Tank No. 1. The displaced vapors pass through the cross connection at top into Tank No.2. The expansion zone for both tanks is obviously in Tank No.2 until the tanks equalize after filling is completed.

b. This shows the detail of the cross connection that can be used in Figure 4.03 1.

Figure 4.03 2.



Swing joints (not shown) are normally used between A and B to permit tanks to settle with impairing the tightness of the pipe connections.

(10) Fill and Return Piping.

(a) A storage tank of more than 60 gallon capacity, other than an outside above-ground tank, shall be filled only through a fill pipe which terminates outside the building at a point at least two feet from any building opening at the same or lower level. A fixed sash window shall not be considered an opening for the purpose of 527 CMR 4.03(10). Fill pipes may pass through other than masonry walls provided the openings for such pipes are made oil-tight. A fill terminal shall be closed tight, when not in use, by a metal cover designed to prevent tampering; and shall be properly identified as a fuel oil fill terminal by an approved metal plate or tag or other permanent device.

When a tank contains a heater, the tank end of the fill pipe shall be sealed by a trap or shall be extended to a point below the lower end of the suction pipe.

(b) A return line from a burner or pump to a supply tank shall enter the top of the tank.

4.03: continued

(c) Cross connections of fill piping between two supply tanks shall not exceed 660-gallon (2,500-L.) aggregate capacity.
(d) An auxiliary tank shall be filled by a pump transferring the oil through continuous piping from the supply tank.
(e) An auxiliary tank shall be located at a level above the top of the supply tank from which it is filled.
(f) An auxiliary tank shall be provided with an overflow pipe draining to the supply tank and extending into the top of the supply tank not more than one inch (25 mm). This requirement does not apply to an auxiliary tank specifically listed for use without an overflow pipe.
(g) An overflow pipe from an auxiliary tank and a return line from a burner or pump shall have no valves or obstructions.

(11) Oil Gauging.
(a) All storage tanks in which a constant level of oil is not maintained by an automatic pump shall be equipped with a method of determining oil level. On cross connected tanks provided with a single fill and single vent, the gauge shall be installed on the tank vented to the outside.
(b) Test wells shall not be installed inside buildings. For outside service they shall be equipped with a tight metal cover designed to discourage tampering.
(c) Gaging devices such as liquid level indicators or signals shall be designed and installed so that oil or vapor will not be discharged into a building from the fuel supply system. Inside tanks provided with fill and vent pipes used for No. 1 or No. 2 fuel oil shall be provided with a device to indicate either visually or audibly at the fill point when the oil in the tank has reached a predetermined safe level.
(d) No tank used in connection with any oil burner shall be equipped with a glass gage or any gage which, when broken, will permit the escape of oil from the tank.

4.04: Oil Burners, Light Fuel Oil Type

(1) Oil Supply and Return Lines.
(a) All oil supply and return lines between the oil supply tank and the oil burner shall be standard cast iron, steel or brass pipe, or copper tubing, with standard steel, malleable iron, cast iron, brass or copper fittings. Exception: Tanks and piping subject to the provisions of 527 CMR 9.00: *Tanks and Containers*.
(b) Listed flexible hose shall be permitted to be used to reduce the effects of jarring and vibration or where rigid connections are impractical, and shall be installed in full compliance with its listing.
(c) All threaded joints and connections shall be made tight with suitable lubricant or pipe compound. Teflon tape shall not be used. Unions requiring gaskets or packings, right or left couplings, and sweat fittings employing solder having a melting point of less than 500°F (260°C) shall not be used in oil lines. Compression type fittings shall not be used.
Exception: Mechanical connections on tubing of the flare type or gaugeable, two ferrule, swage type fittings are acceptable.
(d) Piping used in the installation of oil burners and appliances other than conversion range oil burners shall be not smaller than ⅜-inch iron pipe size or ⅜-OD tubing except that ¼-inch pipe or 5/16-OD tubing may be used in the suction line of systems where the top of the tank is below the level of the oil pump. Copper tubing shall have 0.035-inch nominal and 0.032-inch minimum wall thicknesses.
(e) Oil supply and return lines shall be rigidly secured in place and protected from injury and shall be protected against corrosion. All new oil supply and return lines in direct contact with concrete or earth shall be enclosed with a continuous non-metallic sleeve that extends out of the concrete or earth a minimum of four inches on each end.

On existing installations, whenever a burner, boiler, furnace or tank is replaced, the oil supply and return line shall either be replaced and enclosed with a continuous sleeve as for new installations or a listed oil safety valve shall be installed at the tank end of the oil supply line in accordance with the manufacturer's instructions. All return lines shall be enclosed with a continuous sleeve.

4.04: continued

An oil safety valve and continuous non-metallic sleeve is not required when the burner is located above the oil supply tank and the entire oil supply line is connected to, and above the top of the tank.

(f) Effective July 1, 2010, all oil supply and return lines not enclosed with a continuous non-metallic sleeve or equipped with a listed oil safety valve, shall either be replaced and enclosed with a continuous sleeve as for new installations or shall have a listed oil safety valve installed at the tank end of the oil supply line in accordance with the manufacturer's instructions.

Nothing in 527 CMR 4.00 shall prohibit overhead installation of oil supply and return lines or cross connection of oil supply lines from multiple tanks.

(g) Oil supply lines and return lines to tanks exposed to freezing temperatures shall be connected to the top of the tank. 527 CMR 4.04(1)(g) shall not apply to gravity feed oil burners using #1 fuel oil, range oil or kerosene.

(h) Oil supply lines shall be properly reamed; joints and connections shall be made oil tight; and in no case shall any joint or connection be concealed with a wall, partition or floor.

(i) Proper allowance shall be made for expansion, contraction, jarring and vibration. Pipe lines, other than tubing connected to underground tanks, shall be provided with double swing joints or flexible connectors, or otherwise arranged to permit the tanks to settle without impairing the tightness of the pipe connections.

(j) Piping systems shall be maintained liquid tight. A piping system that has leaks shall be emptied of liquid and repaired.

(k) The oil supply line to a burner shall be provided with a listed filter assembly. 527 CMR 4.04(1)(j) shall not apply to gravity feed oil burners.

(2) Oil Pumps and Valves.

(a) Where oil is supplied to a burner requiring gravity feed and a constant level valve is not incorporated in the burner assembly or in an auxiliary tank used in connection with an automatic pump, an approved constant level valve shall be installed in the oil feed line as close to the burner as practicable, to insure uniform delivery of oil to the burner.

Unless the constant level valve is equipped with an anti-flooding device it shall be provided with a vent line carried to a point higher than the top of the supply tank and terminated with a return bend.

(b) An oil pump not a part of a burner shall be a positive displacement type that automatically shuts off the oil supply when stopped.

(c) An automatic pump not, an integral part of a burner shall be a listed type installed in full compliance with its listing.

(d) A readily accessible manual shutoff valve as described in 527 CMR 4.04(2)(i) shall be installed at each point where required to properly control the flow of fuel in normal operation and where required to avoid oil spillage during servicing. The valve shall be installed to close against the supply.

(e) Where a shutoff is installed in the discharge line of an oil pump not an integral part of a burner, a pressure relief valve shall be connected into the discharge line between the pump and the shutoff valve and arranged to return surplus oil to the supply tank or to bypass it around the pump, unless the pump includes an internal bypass.

(f) Any fuel oil line incorporating a heater shall be provided with a relief valve arranged to discharge to the return line when any valve, pump, or other device may prevent the release of excessive pressure because of the expansion of the oil when heated.

(g) Where oil is supplied to a burner requiring uniform flow by gravity feed and a constant level valve is not incorporated in the burner assembly or the oil is not supplied by an automatic pump, a constant level valve shall be installed in the supply line at the gravity tank or as close thereto as practicable, to ensure uniform delivery of oil to the burner.

The vent opening of such constant level valve shall be connected by piping or tubing to the outside of the building, unless the constant level valve is provided with an anti-flooding device. Vent piping or tubing of constant level valves shall not be connected to tanks or tank vents.

(h) Provision shall be made for adequate ventilation of enclosures, such as vaults or pits, where pumps and accessories are installed prior to entering for inspection or repair.

(i) Readily accessible hand-operated, fusible, springloaded valves of an approved automatic type shall be installed in the oil supply line, one near each burner and one close to each supply tank so as to automatically stop the flow of oil in case of fire.

4.04: continued

(3) Oil Burner Controls.

(a) Oil burning equipment shall be provided with a means for manually stopping the flow of oil to the burner. Said means shall be at a convenient and safe location.

This shall be accomplished by the installation of a quick-closing ¼ turn valve in the oil supply line or by means of an electrical switch in the burner electrical circuit.

The valve or switch shall be plainly marked to indicate its purpose and placed outside the entrance to the room where the burner is located or outside of the cellar/basement door at first floor level in an exposed location clearly visible and readily accessible at all times.

(b) An automatic operated oil burner used in connection with a hot water, steam or warm air heating system shall be equipped with an approved controller that will shut down the burner in the event of abnormal pressure in the steam boiler or overheating within the hot water boiler or warm air furnace.

This controller, acting as a limit safety, shall be in addition to and separate from the regular operating control of the burner, and shall be connected into the burner supply circuit.

(c) If a gas pilot is used for ignition, pilot flame must be proven in 15 seconds or less and before oil can be delivered to the burner. Each gas pilot line shall be installed in accordance with 248 CMR 2.00: *Uniform State Plumbing Code and Massachusetts Fuel Gas Code*.

1. Each fully automatic oil burner having a firing rate of three gallons or less per hour shall be equipped with a type of approved primary safety control which shall shut off the oil supply to the burner within 45 seconds if ignition is not established or in the event of flame failure after combustion has been established.
2. Each fully automatic oil burner having a firing rate of more than three gallons per hour but not more than 20 gallons per hour shall be equipped with a type of approved primary safety control which shall provide a trial for main flame ignition period of not more than 15 seconds.

Once combustion is established and in the event of flame failure, the oil supply shall be shut off to the burner within three seconds nominal, except a flame failure reaction time of more than three seconds but not more than 15 seconds is permitted if intermittent (Commonly called constant ignition) is employed, or if the ignition is re-energized in not more than 0.8 seconds after flame extinguishment occurs.

3. Each fully automatic oil burner having a starting firing rate over 20 gallons per hour shall be provided with a proven source of ignition. The pilot verification control shall prove the presence of an adequately sized and positioned ignitor to safely and smoothly ignite the main fuel prior to allowing the main fuel valve to open.

The time for trial for pilot proving shall be limited to a maximum of 15 seconds. The time for trial for main flame ignition shall be limited to a maximum of 60 seconds. In the event of a flame failure once combustion is established, the oil supply shall be shut off to the burner within three seconds nominal.

4. Each fully automatic oil burner having a firing rate of over 20 gallons per hour, but equipped to provide an initial proven firing rate of more than seven gallons per hour and not more than 20 gallons per hour shall be equipped with a flame verification control which shall provide a trial for ignition of not more than 15 seconds after the oil valve opens.

The burner may increase to maximum firing rate after the main flame is proven. In the event of flame failure once combustion is established the oil supply shall be cut off to the burner within three seconds nominal.

5. The flame verification primary control shall include a safe start circuit to prevent initiation of the ignition cycle in the event of a component failure in the flame verification primary circuit and flame detector. In addition the flame verification primary control used on any burner with a firing rate of more than 20 gallons per hour shall include provisions for a continuous circuit component check of the flame verification primary circuit and the flame detector throughout the flame proving period. (The continuous circuit component check requirement shall apply to all new installations and took effect January 1, 1970.)

4.04: continued

6. Each fully automatic oil burner having a firing rate of over 20 gallons per hour, but equipped to provide an initial proven firing rate of not more than seven gallons per hour shall be equipped with a flame verification control which shall provide a trial for ignition of not more than 30 seconds.

The burner may increase its maximum firing rate after the main flame is proven. In the event of flame failure once combustion is established, the oil supply shall be shut off to the burner within three seconds nominal.

7. A burner which requires a separate power operated louver, fan, or blower to supply air for combustion shall be equipped with an approved combustion air supervisory switch to interrupt burner operation on loss of adequate air for combustion.

8. When used with burners induced and/or forced draft fans shall be electrically interlocked with motor starters of burner motors to prevent the burner operation when draft fans are not operating.

(d) When a steam boiler is equipped with an oil burner, it shall be equipped with an approved low-water cut-off that will shut off the power supply to any automatic oil burner in the event of low water. Said cut-off shall be connected into the main burner supply circuit.

(e) Each automatically fired hot water heating boiler with heat input greater than 400,000 Btu per hour shall have an automatic low water fuel cut-off which has been designed for hot water service, so located as to automatically cut off the fuel supply when the surface of the water falls to the lowest safe permissible water level established by the boiler manufacturer.

(4) Electric Wiring and Equipment.

(a) A person holding a certificate of competency as an oil burner technician may connect or disconnect for the purpose of installation, alteration, repair or replacement, any device, wiring or control required by 527 CMR 4.00 to be part of an oil burner installation, or being an integral part of the oil burning equipment, at the connection on such device, wiring control or part to be replaced, from the thermal disconnect to the oil burning appliance. All electrical wiring shall be in accordance with 527 CMR 12.00: *Massachusetts Electrical Code*.

(b) Oil burners electrically controlled, driven and/or operated shall be supplied from a separate branch circuit located at the service disconnect panel, or at branch circuit sub-panel. This circuit shall be clearly marked for the equipment it controls.

All protective, control and emergency devices shall be series-connected from the electrical distribution panel, through the emergency switch, through the thermal switch, to the service switch in the un-grounded line conductors. The burner controls shall be installed in the un-grounded supply conductors of the circuit and shall not exceed 150 volts to ground.

(c) A control (service switch) to start and stop a light fuel oil burner shall be installed at a location where the operator can view the fire. The switch shall be located at a maximum of three feet from the burner.

(d) Where a stack relay control is used, it shall be so installed that it can be readily removed from the stack mounting flange for inspection of the metallic element without disconnecting the wiring.

(e) An electrical thermal switch fused to break the ungrounded conductor in the main circuit at 165°F, shall be installed in the main power line within six feet over the top of the burner-boiler or burner-furnace.

If the ceiling above the burner-boiler or burner-furnace exceeds 12 feet in height, an additional thermal switch shall be installed on the ceiling and connected in series with the lower switch.

(f) Electrical equipment shall not obstruct clear access to clean out and service panels.

(5) Installation of Indoor Appliances.

(a) An oil burner shall be installed by a person having a certificate of competency in accordance with M.G.L. c. 148, § 10C or directly supervised by or in the presence of a person having a certificate of competency and in accordance with the instructions of the manufacturer of all equipment made part of the oil burner installation.

4.04: continued

(b) All piping, fittings, connections and tanks shall be tight and free from oil leaks.

(c) Before installing or remodeling any oil-burning equipment for commercial or industrial applications, plans or sketches showing the relative location of burners, tanks, pumps, piping, and elevations of buildings and their lowest floors or pits, relating to the proposed installation or alteration, shall be submitted to the head of the fire department upon request.

(d) The installation shall be made in accordance with the instructions of the manufacturer. Such instructions shall include directions and information as deemed by the manufacturer to be adequate for attaining proper and safe installation, maintenance, and use of the appliance. These instructions shall be left with the owner.

(e) The installation shall be such as to provide reasonable accessibility for cleaning heating surfaces, removing burners, replacing motors, controls, air filters, draft regulators, and other working parts, and for adjusting, cleaning, and lubricating parts requiring such attention.

(f) Oil-burning appliances shall be installed only in locations where combustible dusts and flammable gases or vapors are not normally present.

1. Combustible construction within five feet of and directly over an oil fired boiler or furnace shall be protected with noncombustible material of at least one hour fire resistive rating. Such overhead protection shall extend four feet in all directions from the top center of the boiler or furnace but in no case less than two feet beyond the perimeter of said replacement of existing boilers, furnaces, and domestic hot water heaters other than electric hot water heaters and gas-fired installations.

2. In lieu of noncombustible material of at least one hour fire resistive rating, a high temperature (250 to 300°F) rated, pendent, automatic sprinkler supplied from the domestic cold water supply over the center of the furnace or boiler, shall be acceptable. It shall have a "K" factor between 2.5 and 4.0 (reduced orifice), and the water supply shall be capable of supplying at least ten gallons per minute (GPM) at a residual pressure of seven pounds per square inch (PSI) at the location of the sprinkler for ten minutes. The installation of an automatic sprinkler shall be made in accordance with 248 CMR: *Massachusetts Plumbing and Gas Code*.

Exception: 527 CMR 4.04(5)(f)1. and 2. shall not apply to new installations or replacement of existing boilers or furnaces that have an A.F.U.E. (Annual Fuel Utilization Efficiency) rating or domestic hot water heaters that have an EF (Energy Factor) rating in accordance with standards of the United States Department of Energy (D.O.E.).

(g) After installation of the oil-burning equipment, operation and combustion performance tests shall be conducted to make certain that the burner is operating in a safe and acceptable manner and that all controls and safety devices function properly.

(h) Contractors installing industrial oil-burning systems shall furnish diagrams to the owner/occupant showing the main oil lines and controlling valves.

(i) A boiler or furnace in which an oil burner is installed shall be connected by a connector pipe to a chimney flue which has sufficient draft to assure safe operation of the burner. Each section of connector pipe shall be mechanically secured.

(j) An approved automatic draft control is required for light fuel oil burners, except where the equipment is so designed as to otherwise control the draft.

(k) A combustion chamber shall be constructed in accordance with the specifications of the oil burner manufacturer and the boiler or furnace manufacturer.

(l) Safety performance tests shall be conducted where more than one burner is installed in a single combustion chamber or where a single burner has more than one firing head in order to make sure that the automatic device for preventing abnormal discharge of oil at the burners or burner will function properly in the event of failure of one of more units to ignite on starting or in the event of flame extinguishment of one or more units during operation.

(m) Air for Combustion and Ventilation - General

1. Appliances shall be installed in a location in which the facilities for ventilation permit satisfactory combustion of oil, proper venting, and the maintenance of ambient temperature at safe limits under normal conditions of use. On a new or replacement installation, appliances in residential garages and in adjacent spaces that open to the garage and are not part of the living space of a dwelling unit, shall be installed so that all burners and burner ignition devices are located at least 18 inches above the floor, unless such appliance has a sealed combustion system where the combustion air is taken from the exterior of the garage. When appliances are enclosed in a separate compartment having access only from outside the garage, such appliance may be installed at floor level, provided that the required air from combustion is taken from the exterior. Appliances shall be located or protected so they are not subject to vehicular damage.

The Commonwealth of Massachusetts
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SECRETARY

STEPHEN D. COAN
STATE FIRE MARSHAL

MEMORANDUM

TO: Heads of Fire Departments

FROM: Stephen D. Coan
State Fire Marshal

DATE: April 27, 2010

SUBJECT: **S.A.F.E. Funded Fire Safety Houses**

The Executive Office of Public Safety through the Department of Fire Services has purchased one fire safety house for each of the fifteen fire mobilization districts in the state. Local fire departments may utilize these units to augment their public fire and life safety education programs. Each district determines the host community and the policies and procedures for use, scheduling, training and transport.

In this fiscal year (2010), we will complete the fifth and final year of replacing all original 15 fire safety houses. In some cases this has allowed the district to have two units available for use, which was encouraged by our agency. The condition of the old unit was the determining factor.

The practical hands-on activities reinforce the lessons firefighters; specially trained as public fire and life safety educators, teach in the classroom. This fun, make-believe exercise prepares children to react safely and appropriately in case of an actual emergency. Having the children demonstrate how to react when a smoke alarm sounds or when they see smoke or fire can be used as an evaluation instrument to assess their understanding of concepts and behaviors taught in the classroom.

The fire safety house is an educational tool used to teach fire prevention and fire survival in an interactive manner. It is equipped with a living room, kitchen, bedroom and control room. The living room has an electric fireplace, bench seating, a telephone and an exit door. The kitchen, where most home fires occur, is equipped with a sink, stove and cabinets. The second-floor bedroom is furnished with a small bed, a smoke detector and a sliding door that opens onto a porch with an escape ladder.

In the control room, firefighters can operate a theatrical fog machine to "smoke" one or all rooms in the house. Children are instructed to "crawl low beneath the smoke" as they exit to safety. Along the way they check the bedroom door for heat with the back of their hand. If the door feels warm they use their second way out and descend the fire escape ladder. Once safely outside they proceed to the meeting place.

The phone system can be used to simulate a 9-1-1 emergency call to a dispatch center. Children are instructed to give their name, the address and type of emergency and to stay on the phone until they are told to hang up. Each room has a video camera and allows parents to view the children from outside on a television monitor.

Below is a list of the district safety houses purchased with S.A.F.E. grant funding. These units are available to you through the host community. Their contact information is listed.

List of S.A.F.E. Funded Regional Fire Safety Houses

District # Home Site / Contact	**District Communities**
District One Falmouth Chief Paul D. Brodeur (508) 495-2500 Deputy Mark Sullivan (508) 495-2512	Barnstable (Barnstable, West Barnstable, Hyannis, Centerville/Osterville/Marston Mills, Cotuit), Bourne, Brewster, Chatham, Chilmark, Dennis, Eastham, Edgartown, Falmouth, Gay Head, Gosnold, Harwich, Mashpee, Nantucket, Oak Bluffs, Orleans, Otis A.F.B., Provincetown, Sandwich, Tisbury, Truro, Wellfleet, West Tisbury, and Yarmouth
District Two Hanson Chief Jerome A. Thompson Jr. (781) 293-9571	Abington, Bridgewater, Brockton, Carver, Cohasset, Duxbury, East Bridgewater, Halifax, Hanover, Hanson, Hingham, Hull, Kingston, Lakeville, Marion, Marshfield, Mattapoisett, Middleboro, Norwell, Onset, Pembroke, Plymouth, Plympton, Rochester, Rockland, Scituate, Wareham, West Bridgewater, and Whitman
District Three Fall River Chief Paul Ford (508) 324-2743	Acushnet, Attleboro, Berkley, Dartmouth (Districts #1, 2 & 3), Dighton, Fairhaven, Fall River, Freetown, New Bedford, North Attleboro, Norton, Plainville, Raynham, Rehoboth, Seekonk, Somerset, Swansea, Taunton, Westport
District Four Mansfield Chief Neal A. Boldrighini (508) 261-7493	Avon, Bellingham, Canton, Dover, Easton, Foxborough, Franklin, Holbrook, Mansfield, Medfield, Medway, Millis, Norfolk, Norwood, Randolph, Sharon, Stoughton, Walpole, Westwood, and Wrentham

District Five Danvers Chief Kevin Farrell (978) 774-2425	Beverly, Danvers, Essex, Gloucester, Hamilton, Ipswich, Lynnfield, Manchester, Marblehead, Middleton, Nahant, Peabody, Rockport, Salem, Swampscott, Topsfield, and Wenham
District Six Lowell Chief Edward J. Pitta or Lt. Larry LeDoux (978) 551-7946	Andover, Ayer, Bedford, Billerica, Chelmsford, Dracut, Dunstable, Groton, Littleton, Lowell, North Reading, Pepperell, Shirley, Tewksbury, Tyngsborough, Westford, and Wilmington
District Seven Worcester Chief Gerald Dio (508) 779-1820Lt. Anne Pickett (508) 799-1754	Auburn, Blackstone, Brookfield, Charlton, Douglas, Dudley, East Brookfield, Grafton, Leicester, Mendon, Millbury, Millville, Northbridge, North Brookfield, Oxford, Southbridge, Spencer, Sturbridge, Sutton, Upton, Uxbridge, Warren, Webster, West Brookfield, and Worcester
District Eight Fitchburg Chief Kevin D. Roy (978) 345-9666 (Tow vehicle no longer available)	Ashburnham, Ashby, Barre, Berlin, Bolton, Boylston, Clinton, Fitchburg, Gardner, Hardwick, Harvard, Holden, Hubbardston, Lancaster, Leominster, Lunenburg, New Braintree, Oakham, Paxton, Petersham, Phillipston, Princeton, Royalston, Rutland, Sterling, Templeton, Townsend, West Boylston, Westminster, and Winchendon
District Nine Orange Chief Dennis Annear (978) 544-3145	Ashfield, Athol, Bernardston, Buckland, Charlemont, Colrain, Conway, Deerfield, Gill, Greenfield, Hawley, Heath, Erving, Leverett, Leyden, Monroe, Montague, New Salem, Northfield, Orange, Rowe, Shelburne, Shutesbury, Sunderland, Warwick, Wendell, and Whately
District Ten South Hadley #1 Chief William Judd, (413) 533-7111	Amherst, Belchertown, Chesterfield, Cummington, Easthampton, Goshen, Granby, Hadley, Hatfield, Huntington, Middlefield, Northampton, Pelham, Plainfield, Southampton, South Hadley, Ware, Williamsburg, Westhampton, and Worthington
District Eleven Three Rivers Chief Patrick J. O'Connor (413) 283-7161	Agawam, Blandford, Brimfield, Chester, Chicopee, East Longmeadow, Granville, Hampden, Holland, Holyoke, Longmeadow, Ludlow, Monson, Montgomery, Palmer, Southwick, Springfield, Three Rivers, Tolland, Wales, Westfield, West Springfield, and Wilbraham

District Twelve Lanesboro Chief Charles A. Durfee (413) 443-2321	Adams, Alford, Becket, Cheshire, Clarksburg, Dalton, Egremont, Florida, Great Barrington, Hancock, Hinsdale, Lanesboro, Lee, Lenox, Monterey, Mount Washington, New Ashford, New Marlborough, North Adams, Otis, Peru, Pittsfield, Richmond, Sandisfield, Stockbridge, Savoy, Sheffield, Tyringham, Washington, West Stockbridge, Williamstown, and Windsor
District Thirteen Reading Chief Gregory J. Burns (781) 944-3132	Arlington, Belmont, Boston, Braintree, Brookline, Burlington, Cambridge, Chelsea, Dedham, Everett, Lexington, Lynn, Malden, Medford, Melrose, Milton, Needham, Newton, Quincy, Reading, Revere, Saugus, Somerville, Stoneham, Wakefield, Waltham, Watertown, Wellesley, Weston, Weymouth, Winchester, Winthrop, Woburn, and Massport
District Fourteen Acton Chief Robert C. Craig (978) 264-9645	Acton, Ashland, Boxborough, Carlisle, Concord, Framingham, Holliston, Hopedale, Hopkinton, Hudson, Lincoln, Marlborough, Maynard, Milford, Natick, Northborough, Sherborn, Shrewsbury, Southborough, Stow, Sudbury, Wayland, and, Westborough
District Fifteen Amesbury Chief Jonathan R. Brickett (978) 388-1333	Amesbury, Boxford, Georgetown, Groveland, Haverhill, Lawrence, Merrimac, Methuen, Newbury, Newburyport, North Andover, Rowley, Salisbury, and West Newbury

There are other fire safety houses in the Commonwealth that were not funded through this program located at the Boston, Bridgewater, North Andover, Kingston/Duxbury, Woburn, Gardner, Longmeadow/East Longmeadow, Lincoln, and Seekonk Fire Departments. Generally, these are for use only within the community. Please contact the fire education unit or fire chief on how to access them.

*****There is NO COST for any of these training sessions*****

FIRE PREVENTION
MAY SCHEDULE 2010

** *Two-Part Course* **

BFPR UPDATES TO REVIEW NEW & REVISED 527 CMR SECTIONS

This program will review changes and additions made by the Board of Fire Prevention. It will provide an opportunity for fire service personnel to get information on the latest code changes.

(AND)

HAZARD CLASSIFICATIONS FOR NFPA 13 SPRINKLER DESIGN

This course will address Chapter 3 and Chapter 5 of NFPA 13, Standard for the Installation of Sprinkler Systems. The course will cover items that need to be reviewed in the fire sprinkler submittals to ensure the designer has adequately classified the hazards. Participants should have an understanding of the fire sprinkler system plan review process.

List of Dates	Locations
Course #: 200-000-644-A **Date: May 3, 2010** Time: 0900-1200 Location: Andover Town House Banquet Facility	Andover Town House Banquet Facility 20 Main Street, 2nd Floor, Andover, MA *Use municipal parking lot to the rear*
Course #: 200-000-644-B **Date: May 4, 2010** Time: 0900-1200 Location: Department of Fire Services	Department of Fire Services One State Road, Stow, MA *Classroom 109*
Course #: 200-000-644-C **Date: May 10, 2010** Time: 0900-1200 Location: Western New England College	Western New England College 1215 Wilbraham Road, Springfield, MA
Course #: 200-000-644-D **Date: May 14, 2010** Time: 0900-1200 Location: UMASS - Dartmouth	University of Massachusetts – Dartmouth Woodland Campus 285 Westport Road, Dartmouth, MA *Use Parking Lot #7*
Course #: 200-000-644-E **Date: May 17, 2010** Time: 1830-2130 Location: Easthampton Fire Department	Easthampton Fire Department 32 Payson Avenue, Easthampton, MA
Course #: 200-000-644-F **Date: May 18, 2010** Time: 1830-2130 Location: Department of Fire Services	Department of Fire Services One State Road, Stow, MA *Classroom 109*

Register Early!

Mail to: Registrar
Massachusetts Firefighting Academy
State Road, P.O. Box 1025, Stow, MA 01775
(978) 567-3200

Or Fax it to:
(978) 567-3229

Additional information & applications can be obtained @ www.mass.gov/dfs

Department of Fire Services / Division of Fire Safety – Code Enforcement Training

Department of Fire Services & Massachusetts State Police Bomb Squad

are pleased to announce

IED Recognition & Response Training

This one-day course will:

- Familiarize first responders with explosive materials
- Assist in identification of Improvised Explosive Devices (IEDs), Vehicle Borne Improvised Explosive Devices (VBIEDs), Homicide / Suicide bombers, and homemade explosives (HMEs)
- Identify proper response guidelines to such incidents

Current trends, case studies and information sources are also highlighted. A "live" explosives demonstration and explosives detection canine (EK9) demonstration will be conducted, when possible.

Training is designed for all first responders

Course:	203-900-950 Session A	Student Capacity:	150
Date:	May 19, 2010	Priority:	First Responders within the SE Homeland Security Region
Time:	0830 – 1630		
Location:	Bristol Community College 777 Elsbree Street, Fall River, MA *Room H209/210 (within the "H" building)*		** OEMS credits pending **

Backfill/Overtime (BF/OT) support may be allowable via your Regional Homeland Security Advisory Council. Attendees seeking BF/OT support **must** contact their respective Council **prior** to applying for this course. Councils would need to submit a Training Petition to EOPSS for approval of any municipal BF/OT.

Please complete a standard DFS / MFA student application or register online at www.mass.gov/dfs.

Mail to: Registrar
Massachusetts Firefighting Academy
State Road, P.O. Box 1025, Stow, MA 01775
(978) 567-3200

Or Fax to:
(978) 567-3229

This is a priority selection course and you will be notified by email as to whether or not you have been selected to attend.

Department of Fire Services / Massachusetts State Police Bomb Squad

From Battlefield to Street: One Uniform to Another

Currently we are experiencing the largest number of combat veterans returning to their public safety departments, having been exposed to intense combat and/or extended military deployments since the Vietnam era. In Massachusetts alone, over three hundred firefighters have served in Iraq and Afghanistan. This course explores the adjustment issues that emergency services and public safety personnel are currently experiencing, and how to help them manage the challenges they face returning to the streets of the cities and towns they serve.

Community CISM teams are aware that First Responders – irrespective of which uniform or badge they carry, or whether they perform their duties on a full-time, part-time, call or volunteer basis – are at risk of being "triggered" by events in the street which may bring back incidents from their military service. This course integrates the CISM method with combat stress work. Lessons learned from the Civil War through the battlefields of Iraq and Afghanistan are reviewed.

The course presents a method - the RESTORE protocol – as a phased trauma recovery intervention based on CISM. Students will have practicum experience in eliciting first, last and worst "benchmarks" from combat exposure, exploring the soldier's deployment from beginning to end, and selecting the most significant representative event to be fully debriefed.

This method can be used on a group as well as on an individual basis - sharing knowledge of normal reactions of warriors to combat, forecasting potential symptoms and making connections to critical incidents in the street – as well as how understanding these can provide an opportunity for healing and recovery.

Course #:	**200-000-666 A**	**Date:**	**May 22 & 23, 2010**
Time:	**0800-1700**	**Location:**	**Hopkinton Fire Department** **73 Main Street** **Hopkinton, MA**

Application Process: Complete the DFS/MFA Student Application, or register online @ **www.mass.gov/dfs.**

Mail to: Registrar
Massachusetts Firefighting Academy
State Road, P.O. Box 1025, Stow, MA 01775
(978) 567-3200

Or Fax it to:
(978) 567-3229

*****There is NO COST for any of these training sessions*****

FIRE PREVENTION
JUNE SCHEDULE 2010

FIREWORKS DETAIL ORIENTATION

A training program for the person or persons responsible for issuing fireworks permits; inspecting fireworks display sites and working fireworks details.

List of Dates	Locations
Course #: 200-000-629-D **Date: June 7, 2010** Time: 0900-1200 Location: Andover Town House Banquet Facility	Andover Town House Banquet Facility 20 Main Street, 2nd Floor, Andover, MA *Use municipal parking lot to the rear*
Course #: 200-000-629-E **Date: June 9, 2010** Time: 1830-2130 Location: Easthampton Fire Department	Easthampton Fire Department 32 Payson Avenue, Easthampton, MA
Course #: 200-000-629-F **Date: June 15, 2010** Time: 0900-1200 Location: Western New England College	Western New England College 1215 Wilbraham Road, Springfield, MA
Course #: 200-000-629-A **Date: June 17, 2010** Time: 0900-1200 Location: Department of Fire Services	Department of Fire Services One State Road, Stow, MA *Classroom 109*
Course #: 200-000-629-G **Date: June 22, 2010** Time: 0900-1200 Location: Cedarville Community Center	Cedarville Community Center 2209 State Road, Plymouth, MA
Course #: 200-000-629-B **Date: June 24, 2010** Time: 1830-2130 Location: Department of Fire Services	Department of Fire Services One State Road, Stow, MA *Classroom 109*

Register Early!

Mail to: Registrar
Massachusetts Firefighting Academy
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Additional information & applications can be obtained @ www.mass.gov/dfs

DEPARTMENT OF FIRE SERVICES HOMELAND SECURITY SEMINAR

KIDS AND BOMBS

The Massachusetts State Police Fire and Explosion Investigation Section are conducting an 8-hour "Kids and Bombs" seminar. This seminar will include a review of the early warning indicators of a juvenile bomb maker, the current national statistics on juveniles and bombs and the precursors and instrumentalities showcased by the Internet. Participants will be provided with pre- and post- blast investigative techniques from the "Bomb Tech" perspective that will include a discussion of the issue as it relates to educational institutions. The "Bomb Techs" presentation will include static display, a canine and robot demo, and will utilize actual case examples to highlight teaching points.

This seminar will also give participants a "criminal investigators" perspective that will be highlighted by a section on "how to build a case" that incorporates sound investigative principles and juvenile legal issues. This seminar will also have a clinical perspective that examines emotional and behavioral functioning of juveniles engaged in bomb making. What are the considerations when there is a need to identify appropriate mental health or social services?

This seminar is designed for a multi-disciplinary audience to include:

- Public Safety First Responders - Red and Blue teams
- ADA's
- School personnel
- Fire Safety/JFS Educators
- JFS Clinicians
- MA & RI IAAI members
- Probation Officers
- School resource officers
- Case workers
- Educators

6.5 contact hours available toward educator PDPs

Course #:	200-039-951 Session B
Date:	June 22, 2010
Time:	9:00 a.m. to 5:00 p.m.
Location:	Devens Common Center, Devens, MA www.devenscommoncenter.com
Cost:	$30.00 would include breaks and lunch for each attendee

Payment in advance is required. Please submit a completed standard DFS / MFA student application along with your money order or personal check for $30.00, made payable to "The Massachusetts Firefighting Academy Trust Fund" to the address below. NOTE: Cash will NOT be accepted and purchase orders will ONLY reserve a spot. Acceptance into this class is granted once payment is received in full (check or money order). Payment WILL NOT be accepted the day of the seminar.

Application can be obtained at www.mass.gov/dfs.

Mail to: Registrar
Massachusetts Firefighting Academy
State Road, P.O. Box 1025, Stow, MA 01775
(978) 567-3200

Fourth Annual **Northeast**

Juvenile Firesetting Conference

Take-Home Tools and Effective Strategies

Please plan to join us

> **May 13-14, 2010**
> **The Crowne Plaza, Worcester, MA**

> Please join us at the country's premier conference on Juvenile Firesetting!

> Presenters from across the U.S. & New Zealand

> Keynote address:
Meri-K Appy, President of the Home Safety Council

> Topics of interest:
- Cyberbullying, social media & the Internet
- Anger management
- CBT skills for firesetting
- Working with parents
- Middle school fire safety
- Community interventions

> Up to 9 CEUs available

> $129 Conference Registration
FREE Pre-Conference Institute with early registration, $30 additional after April 1

> For more information on the The Crowne Plaza go to www.cpworcester.com

For more information or to register online go to www.brandonschool.org

educators

social services

fire service

mental health

juvenile justice

burn care

Register by April 1 & the May 13th Pre-Conference Institute is FREE!

Sponsored by Brandon, Department of Fire Services, MA Property Insurance Underwriting Association, MA Association of Safety & Fire Educators

CISM
How It Fits in a Critical Incident

The Department of Fire Services is hosting a one-day conference where attendees will hear first-hand accounts of the role Critical Incident Stress Management plays in multi-disciplinary/ large-scale incidents, understand the need for CISM services, what is available to departments in the Commonwealth, and how to initiate those services.

Topics:

- 'We were there' – Great Barrington Ice Rescue
- 'We were there' – Norton Drowning
- 'We were there' – Worcester presenter John Beahn
- How do you organize a multi-branch operation?
- How do you do follow-up?
- Who is the ultimate decision maker during an incident?
- How far we have come and what resources are available to you
- Group discussion

Representatives from the following organizations will be available: DCR, WINGS, MCFC, Boston PD, MSP, ICISF, Boston EMS, Cambridge FD, Worcester FD, Shrewsbury School, PFFM and Brattleboro Retreat

COURSE #:	200-000-526A
DATE:	May 20, 2010 0830 – 1600 hours
LOCATION:	Devens Common Center 31 Andrews Parkway Devens, MA

A self-pay box lunch will be available for $11.50 which includes: choice of turkey, ham, or roast beef sandwich, bag of chips, pickle, cookie or brownie and a choice of soda or bottled water.

Please complete a standard DFS / MFA student application or register online at www.mass.gov/dfs.

Mail to: Registrar
Massachusetts Firefighting Academy
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(978) 567-3200

Or Fax it to:
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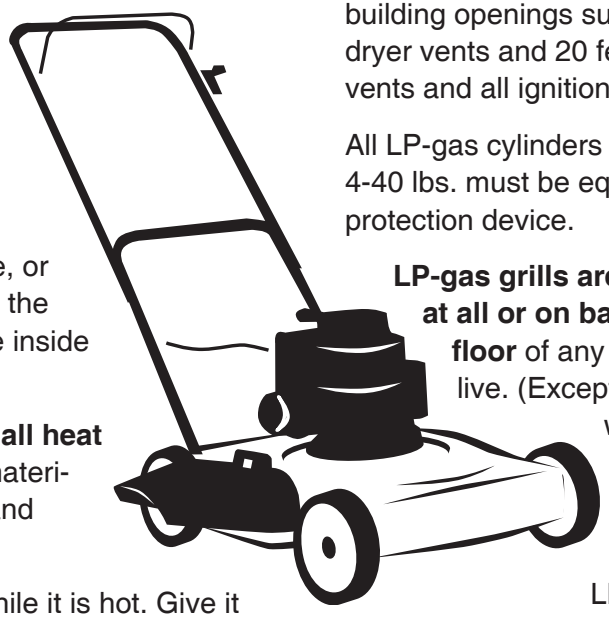
The Massachusetts State Fire Marshal offers the following tips for a safe and happy summer.

Gasoline and Lawn Mowers...



Gasoline vapors are highly flammable. They stay on your clothing and **can ignite** if you light a match or cigarette.

Store gasoline only **in approved containers**, outside, or in a building not attached to the house. Never keep gasoline inside the home.

Keep gasoline away from all heat sources such as smoking materials, pilot lights, campfires, and grills.

Never fuel a lawn mower while it is hot. Give it a few minutes to cool off first.

Keep hands and feet away from the mower while it is running.

Barbecue Safely...

Use all barbecue **grills away from the house** in the backyard.

Supervise children whenever any grill is in use.

Never use gasoline on any grill!

Gas Grills...

Keep all LP-gas outside, 10 feet away from building openings such as doors, windows, dryer vents and 20 feet away from air intake vents and all ignition sources.

All LP-gas cylinders with a capacity between 4-40 lbs. must be equipped with an overfill protection device.

LP-gas grills are not permitted inside at all or on balconies above the first floor of any building where people live. (Except where there is a stairway to the ground and it is 10 feet from all building openings and air intake vents.)

LP-gas is heavier than air and sinks. A leaky grill could pose a hazard to people below. Possible ignition sources include smoking materials, air conditioners, compressors, pilot lights and cars.

Make sure all connections are tight and secure.

Charcoal Grills...

Use only charcoal lighter fluid to start charcoal grills.

Once the coals have been lighted, **never add more lighter fluid to the fire** — flames may travel up the stream of lighter fluid resulting in serious burns.

When your car overheats...

Always:

- **Turn off your car** and **wait** at least **one-half hour** before attempting to open the radiator.
- **Use a heavy rag** or cloth to open the radiator.
- **Stand back** as far as possible. **Keep your face out of the way** in case the radiator should rupture!

Opening hot car radiators is one of the leading causes of burns. These burns can be prevented with patience and appropriate precautions.

When your car overheats, or even when it's just been running for a while, pressure builds up inside the radiator.

If you open a hot car radiator, hot steam and liquid can splash on your face and hands causing painful, disfiguring burns.

DFS/OSFM Apr '10

Fireworks...

Enjoy the many professional, supervised fireworks displays.

The possession and use of **all fireworks** by private citizens is **illegal in Massachusetts.**

This includes sparklers, party poppers, snappers, firecrackers and cherry bombs, to name a few.

It is illegal to purchase fireworks in another state and transport them into Massachusetts.

Do not purchase fireworks through mail-order catalogues. Government cannot prohibit distribution of these catalogues, but police do confiscate illegal shipments of fireworks. Many consumers attempting to circumvent the law have lost both their money and their fireworks.

Burn First Aid...

Stop, Drop and Roll to extinguish a clothing fire.

Cool a burn. For minor burns, run cool water immediately over the burn.

Seek emergency medical help immediately for more serious burns.

Use sunscreen to avoid sunburn.

Hotel-Motel Safety...

Select accommodations equipped with sprinklers and smoke detectors in guest rooms.

Consider fire safety when checking into a hotel or motel. **Count** the number of **doors** down the hall **to the nearest fire exit staircase**. Never use elevators in case of fire.

If you are deaf or hard of hearing, request a "Hearing Impaired Kit" from the front desk that will have a strobe smoke alarm.

Keep the room key, eyeglasses and a flashlight on the night table**. If a fire occurs, take them with you and go to the door.**

- If the door feels cool, open the door a crack. Be ready to close the door if hot air, flames, or smoke rush through the crack.
- If this does not occur, yet the hall is hazy with smoke, crawl down the hall counting the doors to the nearest stairway exit.
- If this exit cannot be reached, turn around and count the doors back to your room. Unlock the door and re-enter.

If it is unsafe to leave the room during a fire:

- **Fill the tub** with cold water.
- **Stuff wet towels around the door** to keep smoke out.
- If possible, open a window and hang a sheet outside to signal for help.
- **Cover your face** with a wet cloth and stay low if smoke gets in the room.
- **Do not jump**.

Summer

Safety Tips

Stephen D. Coan
State Fire Marshal

P.O. Box 1025 - State Road
Stow, Massachusetts 01775
978-567-3300
www.mass.gov/dfs